Abstract of Disclosure

A method and related apparatus for reordering access requests used to access main memory of a data processing system. The method includes receiving one or more access requests for accessing the memory device in a first predetermined order, and reordering the access requests in a second predetermined order to be processed in a request queue by relocating a first access request to follow a second access request accessing a same memory page to increase processing efficiency. In addition, the relocating is prohibited if it increases a processing latency for a third access request to exceed a predetermined limit.